IN THE CLAIMS:

Please cancel claims 1 and 6.

Please replace the text of Claims 2-5 and 8-11 as follows:

2. (Amended) A semiconductor device according to claim 4, wherein the optical signal transfer device is an optical fiber.

3. (Amended) A semiconductor device according to claim 4, further comprising a package that is in contact with and that seals the semiconductor chip and a part of the optical fiber.

4. (Amended) A semiconductor device comprising:

a semiconductor chip mounted on a mounting substrate and a light-receiving element formed in the semiconductor chip for receiving an optical signal; and

an optical signal transfer device embedded in the mounting substrate, wherein the optical signal transfer device directly contacts the light-receiving element for transferring the optical signal into the semiconductor chip.

5. (Amended) A semiconductor device comprising:

a mounting substrate and at least one optical signal transfer device embedded in the mounting substrate for transferring an optical signal;

a plurality of semiconductor chips mounted on the mounting substrate; and

a light-receiving element formed in at least one of the semiconductor chips and that directly contacts the optical signal transfer device for receiving the optical signal,

wherein the optical signal is transferred among the plurality of semiconductor chips through the optical signal transfer device.

8. (Amended) A semiconductor device, comprising:

a semiconductor chip and a light-receiving element formed on the semiconductor chip for receiving an optical signal, wherein the semiconductor chip is disposed in a first plane; and

an optical signal transfer device that directly contacts the light-receiving element for transferring the optical signal from an arithmetic processing apparatus into the semiconductor chip, wherein the optical signal transfer device is disposed in a second plane that is spaced apart from the first plane,

wherein the optical signal transfer device is embedded in a mounting substrate on which the semiconductor chip is mounted.

9. (Amended) A semiconductor device comprising:

a semiconductor chip and a light-receiving element formed on the semiconductor chip for receiving an optical signal; and

an optical signal transfer device connected to the light-receiving element for transferring the optical signal from an arithmetic processing apparatus as an optical signal into the semiconductor chip, wherein the optical signal transfer device is a light-emitting surface that is formed in the mounting substrate.

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10. (Amended) A semiconductor device, comprising:

a mounting substrate;

at least one optical signal transfer device embedded in the mounting substrate, wherein the at least one optical signal transfer device is adapted to transfer an optical signal;

a plurality of semiconductor chips mounted on the mounting substrate; and

a light-receiving element formed in at least one of the semiconductor chips and that is connected to the optical signal transfer device for receiving the optical signal,

wherein the optical signal is transferred among the plurality of semiconductor chips through the optical signal transfer device, wherein the optical signal transfer device is formed in a lattice configuration and embedded in the mounting substrate.

11. (Amended) A semiconductor device according to claim 8, wherein the light-receiving element is formed in a cylindrical shape on the semiconductor chip on a side thereof that is opposite to the mounting substrate, and the light-receiving element is inserted in the optical signal transfer device to thereby connect the light-receiving element to the optical signal transfer device.

A6 and B3

Please add new Claims 12-16 as follows:

12. (New) A semiconductor device according to Claim 10, wherein a plurality of selected ones of said optical signal transfer devices extend in a first direction, and wherein a

A6 and B4

plurality of selected others of said optical signal transfer devices extend in a second direction different than the first direction and intersect the plurality of selected ones of said optical signal transfer devices.

13. (New) A semiconductor device comprising:

a mounting substrate and at least one optical signal transfer device disposed in a first plane in the mounting substrate for transferring an optical signal;

a plurality of semiconductor chips mounted on the mounting substrate, wherein the semiconductor chips are disposed in a second plane that is spaced apart from the first plane; and

a light-receiving element formed in at least one of the semiconductor chips and that directly contacts the optical signal transfer device for receiving the optical signal,

wherein the optical signal is transferred among the plurality of semiconductor chips through the optical signal transfer device.

14. (New) A semiconductor device according to claim 9, wherein the light-receiving element is formed in a cylindrical shape on the semiconductor chip on a side thereof that is opposite to the mounting substrate, and the light-receiving element is inserted in the optical signal transfer device to thereby connect the light-receiving element to the optical signal transfer device.

15. (New) A semiconductor device according to claim 10, wherein the light-receiving element is formed in a cylindrical shape on the semiconductor chip on a side thereof that is opposite to the mounting substrate, and the light-receiving element is inserted in the optical signal transfer device to thereby connect the light-receiving element to the optical signal transfer device.

16. (New) A semiconductor device comprising:

a semiconductor chip and a light-receiving element formed in the semiconductor chip for receiving an optical signal, wherein the semiconductor chip is disposed in a first plane; and

an optical signal transfer device connected to the light-receiving element for transferring the optical signal into the semiconductor chip,

wherein the optical signal transfer device is disposed in a second plane that is spaced apart from the first plane.